

UNIQUE IDENTIFICATION (UID)



Unique Identification (UID) of Tangible Items



Agenda

- ◆ Overview
- ◆ Technical Specifics
- ◆ UID Lifecycle
- ◆ UID Organization and Efforts to Date
- ◆ Next steps

Overview



DoD Vision for Item Marking

- To create a policy establishing a strategic imperative for uniquely identifying tangible items relying to the maximum extent practical on international standards and commercial item markings.
- Uniquely identified (UID) tangible items will facilitate item tracking in DoD business systems and provide reliable and accurate data for management, financial, accountability and asset management purposes.



Strategic Purpose of UID is to...

- Integrate item data across government and industry asset management systems, resulting in:
 - Improved data quality and global interoperability
 - Rationalization of systems and infrastructure
- Improve item management and accountability
- Improve asset visibility and life-cycle management through life cycle traceability
- Enable more accurate audit opinions on the property, plant, and equipment and operating materials and⁵supplies portions of financial



DoD's Approach to UID

- The Department of Defense (DoD) established a joint international/industry/government Integrated Product Team (IPT) to achieve the following goals:
 - Identify the UID data standard and business rules
 - Develop a feasible and rapid implementation strategy
- The IPT consists of five simultaneous efforts:
 - Policy Development
 - Standards
 - Business Rules
 - DFARS Cases



Technical Specifics



What is Unique Identification (UID)?

UID is . . .

. . . the set of data for tangible assets that is globally unique and unambiguous, ensures data integrity and data quality throughout life, and supports multi-faceted business applications and

EID

194532636



Original Part Number

1234



Serial Number

786950





Key Terms

- **Enterprise:** Entity responsible for assigning the unique identifier (UID) to a tangible asset.
- **Registration (or Controlling) Authority:** Organization responsible for assigning a non-repeatable identifier to an enterprise.
- **Enterprise Identifier:** Code uniquely assigned to an enterprise by a registration (or controlling) authority.
- **Serial Number:** Code assigned by the enterprise to an item providing for differentiation of that item from any other like or unlike item. Serial numbers can be unique within the enterprise or unique within the part number.
- **Part Number:** Code assigned by the enterprise to a class of items with the same form, fit, function, and interface. The part number is original if assigned at asset birth and current if reassigned from the original.



Data Content Elements

- For items that are serialized within the enterprise, the UID is a combination of the **enterprise identifier** and the **serial number**
- For items that are serialized within the part number, the UID is a combination of the the **enterprise identifier**, the **serial number**, and the **original part number**
- To display data elements not part of the UID data content, (i.e., current part number) a separate mark/label may be used
- Human readable data may include data in addition to the data in the mark(s)



Collaborative Solution

- Seek international and intergovernmental support for use of three data standards:
 - ATA Spec 2000 CSDD text element identifiers
 - EAN.UCC application identifiers
 - ISO/IEC 15418 data identifiers
- Create an interoperable environment across industries and government by using ISO/IEC 15434 as the UID syntax standard

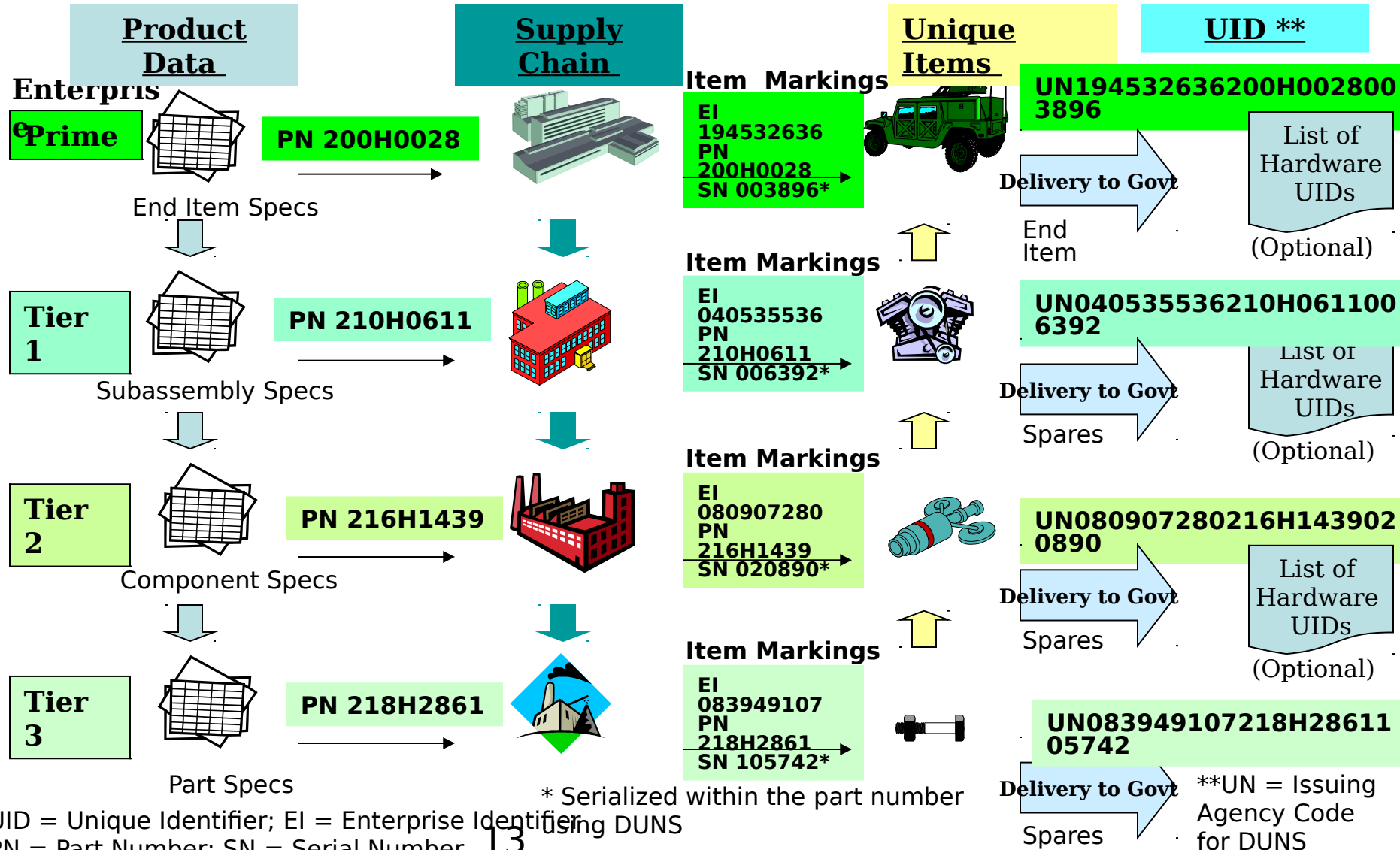


Actions Underway

- Request of the ISO/IEC JTC1/SC31 that TEIs be added to ISO/IEC 15434 as a new code format to support part marking
- Modify ISO WD 21849 to reference ISO/IEC 15434 syntax (includes data element separator, header, and terminator)
- Add AIs to the General EAN Specification to support multiple registration (or controlling) authorities and corresponding enterprise identifiers and reflect these in ISO/IEC 15418
- Modify the FACT DI specification in ISO/IEC 15418 to accommodate UCC/EAN enterprise identifiers
- Modify ISO WD 21849 and ATA Spec 2000 to support multiple registration (or controlling) authorities and corresponding enterprise identifiers
- Update the semantics of each of the three standards to incorporate the defined elements of the UID



UID in the Supply Chain

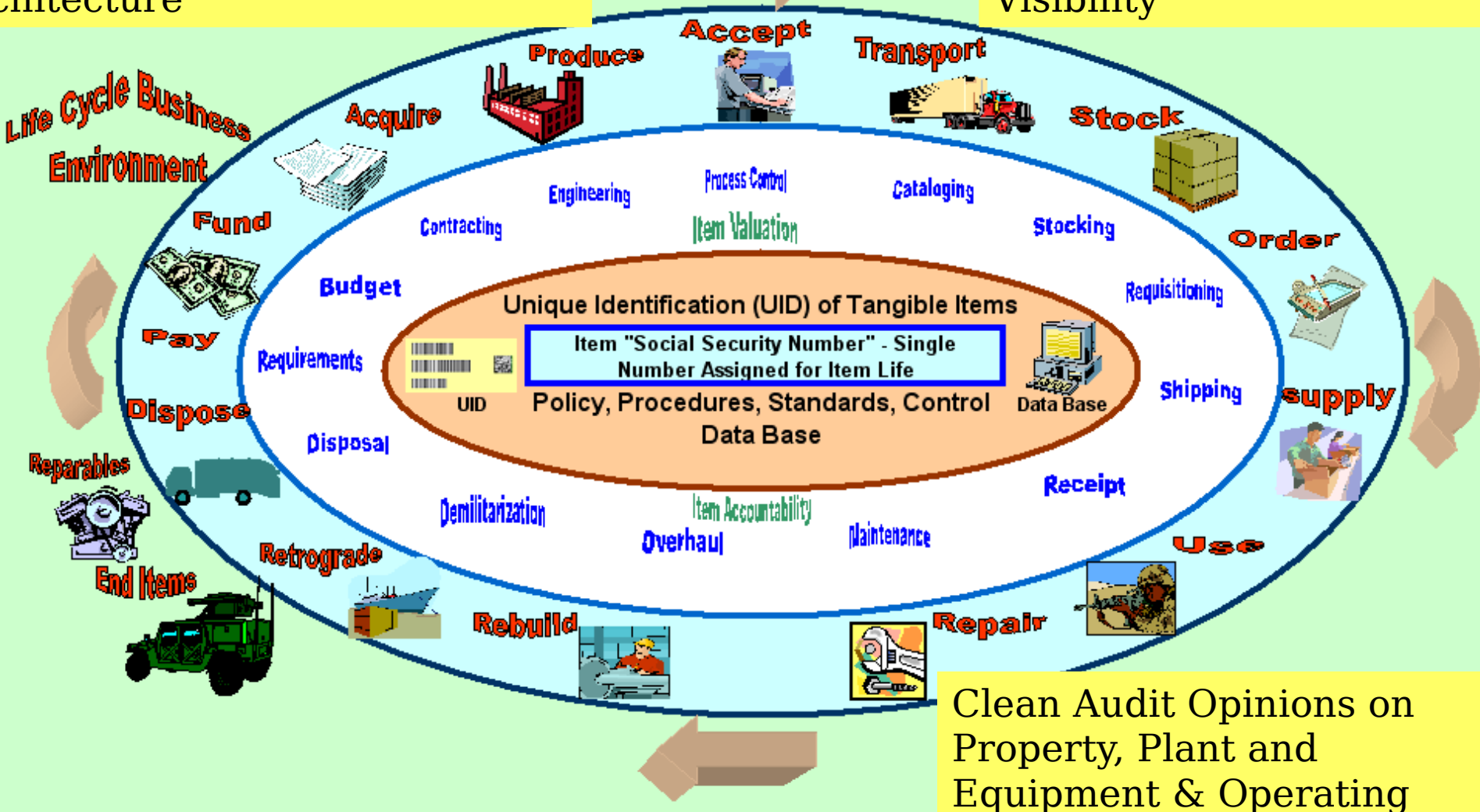




UID Role - Business Enterprise Architecture

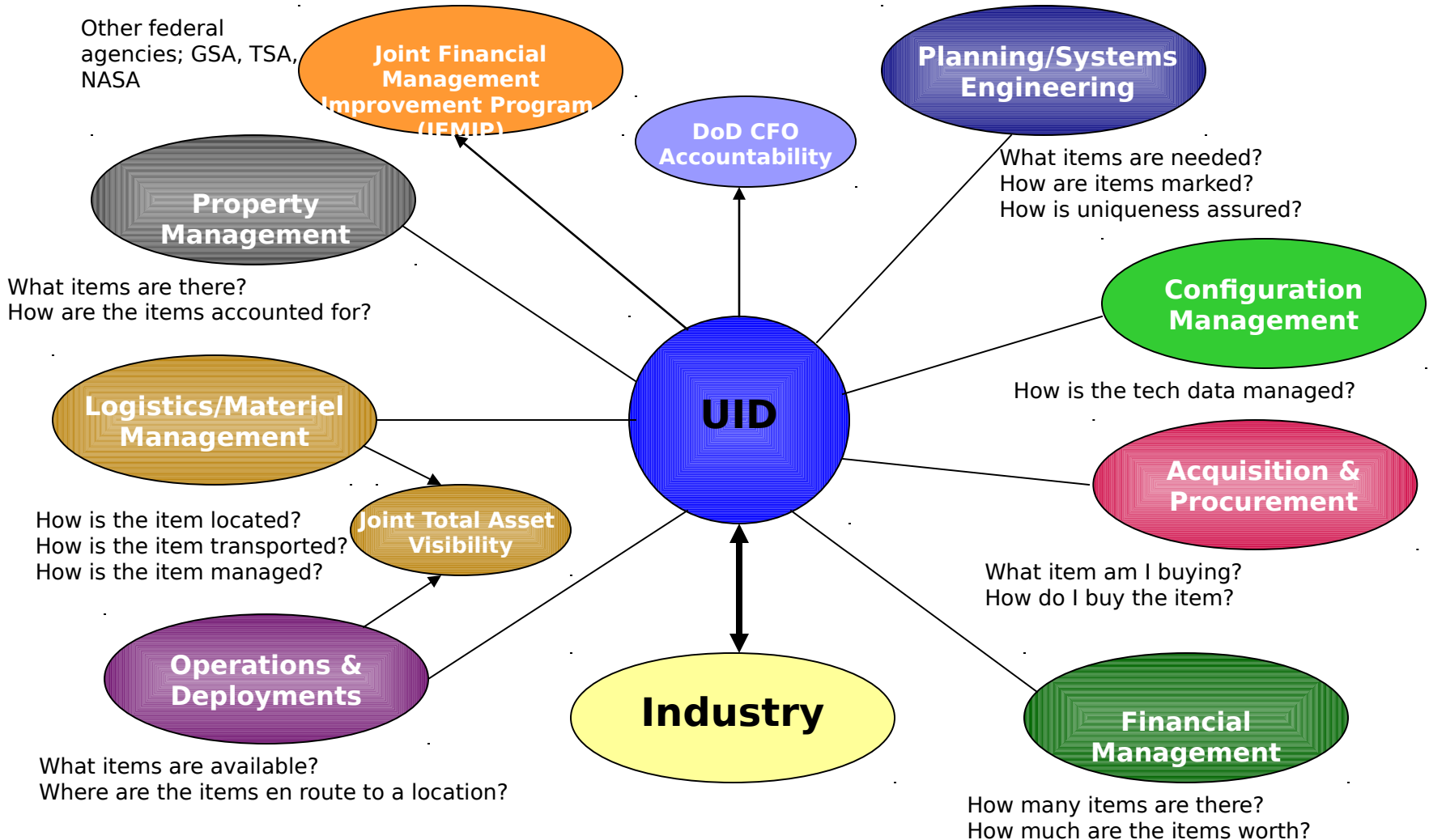
Enhance the Business Enterprise Architecture

Enhance Total Asset Visibility





UID Interfaces



UID Lifecycle

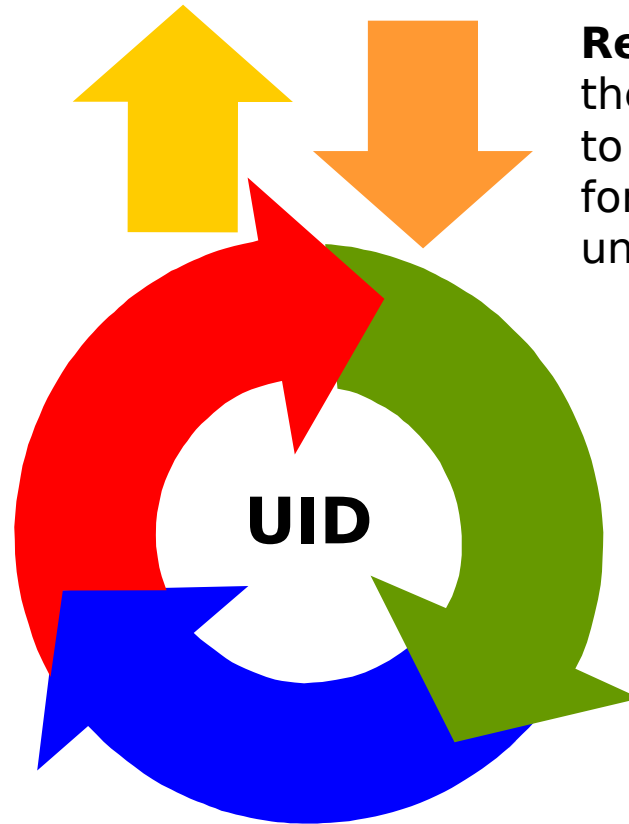


What is the UID Lifecycle?

Dispose -

DoD/GSA records the “termination” of the UID at time of item disposal

Use - Functional stakeholders use UID as a primary or alternate key in the AIS to access or update item information based on its UID



Require - DoD contracts reflect the requirement for part marks to include UID data elements for all items which require unique identification

Create/Generate -

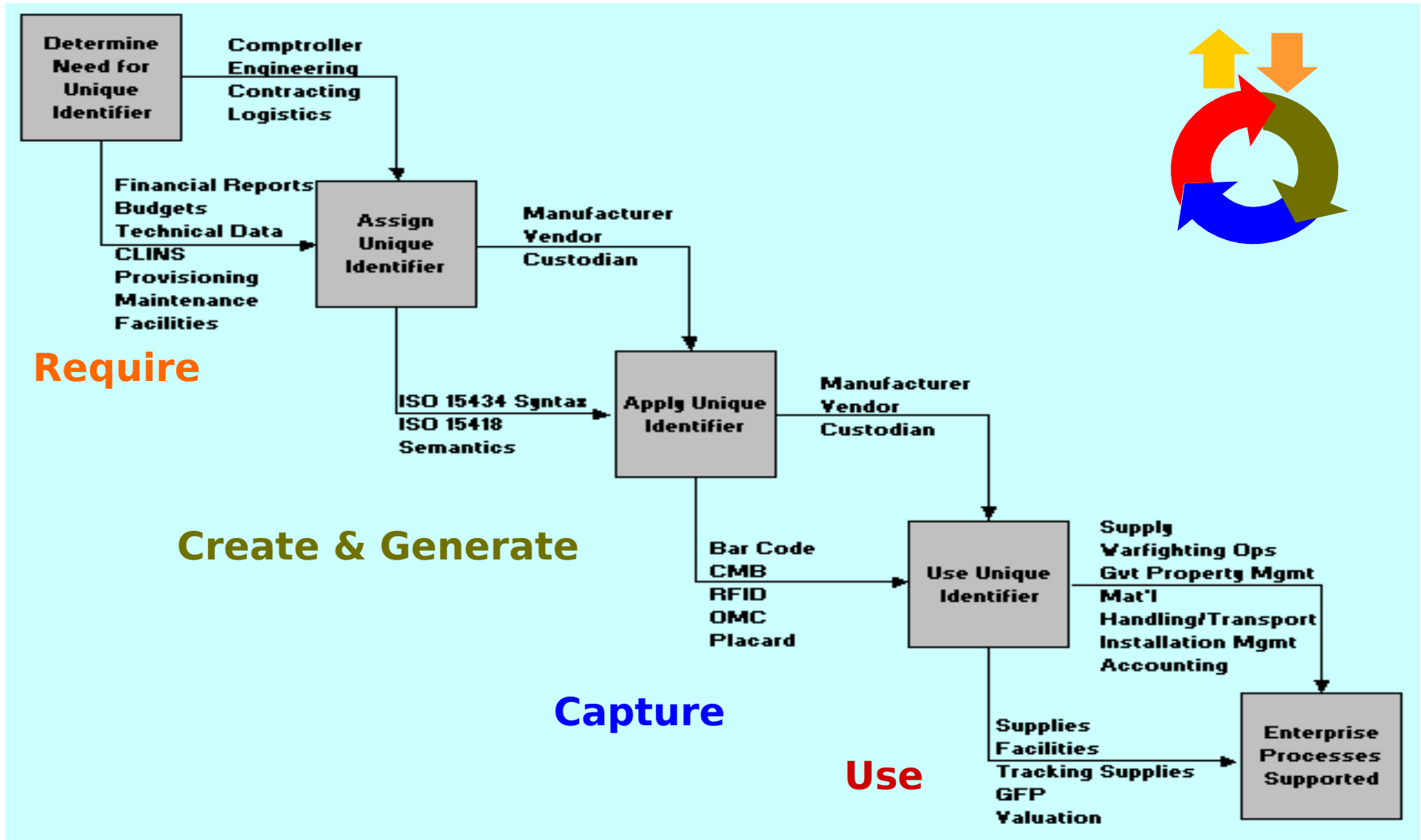
Industry suppliers/manufacturers throughout supply chain assign and apply UID data elements and ensure the uniqueness of the component data elements

Capture - DoD establishes the “birth” record of the

UID by capturing the machine/human readable component data elements to create the UID in the AIT/AIS



UID Lifecycle & Interface Flow

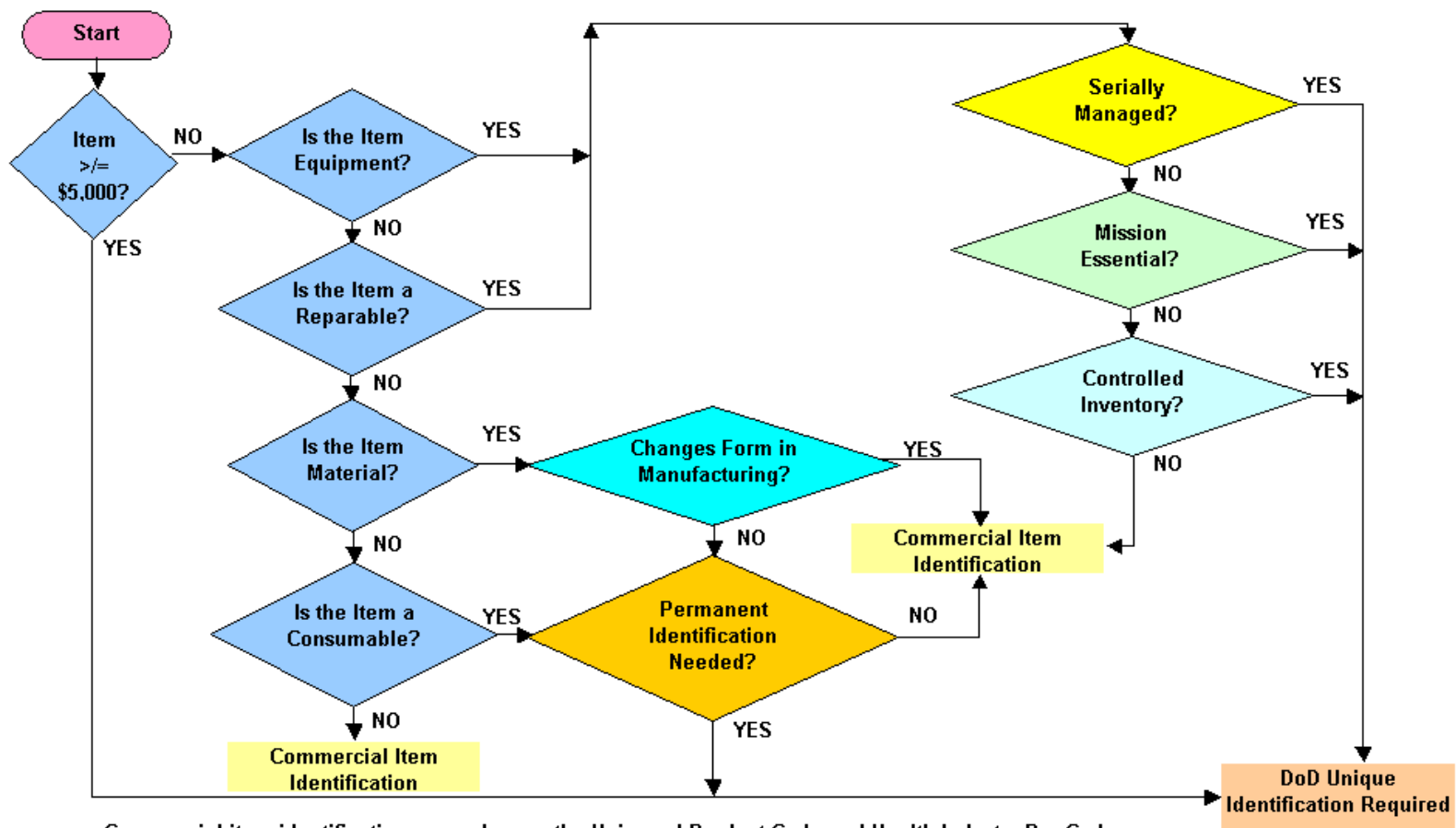




Require the UID



Which Items Require a Unique Identifier





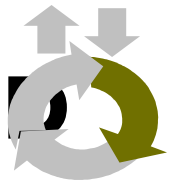
Require the UID



- All program managers for new equipment, major modifications, and reprocurements of equipment and spares shall begin planning to apply Unique Identification (UID) on tangible items
- UID is a mandatory DoD requirement for all solicitations issued on or after January 1, 2004
- Specific guidance related to UID requirements can be found by referring to the following sources:
 - DFARS (under revision to include UID)
 - DoD Guide to Unique Identification of Tangible Items
 - Coordinated Guidance



Create and Generate the UID



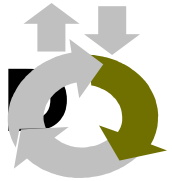
The components that make up the UID are identified in the table below. Each enterprise has two options for creating the UID.

	UID Construct #1	UID Construct #2
Based on current enterprise configurations	If items are serialized within the Enterprise	If items are serialized within the Part Number
UID is derived by concatenating the data elements IN ORDER:	Issuing Agency Code* Enterprise ID Serial Number	Issuing Agency Code* Enterprise ID Original Part Number Serial Number
Data Identified on Assets Not Part of the UID (Separate Identifier)	Current Part Number	Current Part Number

*The Issuing Agency Code (IAC) represents the registration authority that issued the enterprise identifier (e.g., Dun and Bradstreet, EAN.UCC). The IAC can be derived from the data qualifier for the enterprise identifier.




Create and Generate the UID




BUSINESS RULES

- The UID shall be derived from its discrete component data elements. The UID is not required to be marked on the item as a separate data element.¹

UID Construct

EID 12V194532636	
Serial No. 18S786950	

UID Construct

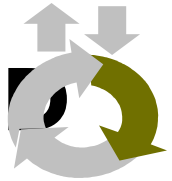
EID 12V194532636	
Orig. Part No. 1P1234	
Serial No. 18S786950	

¹If the enterprise chooses to mark the UID as a discrete data element on the item, the component data elements must also be marked on the item as discrete data elements, in addition to the UID.

²This example uses MH10.8.2 Data Identifiers.



Create and Generate the UID



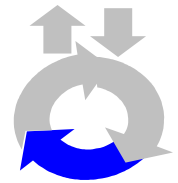
- Data qualifiers (semantics) will define each machine-readable data element marked on the item.
- The data qualifier associated with the serial number will identify which UID construct is used to build the UID.

Semantics Translation Between Data Identifiers (DI), Application Identifiers (AI), and Text Element Identifiers (TEI)¹

	DI	AI	TEI
Enterprise ID			
CAGE/NCAGE	17V	N/A	CAG
DUNS	12V	N/A	DUN
EAN.UCC	3V	TBD	EUC
Serial No. w/in Enterprise Identifier	18S	N/A	SER
Serial No. w/in Original Part No.	S	21	SEQ
Original Part No.	1P	01	PNO
Current Part No.	30P	240	PNR
Unique Identifier	25S	8004	UID



Capture the UID



- For activities after initial delivery, in support of the product life cycle, any entity that collects data about the item must be capable of associating the data with the UID in accordance with the program requirements.
- Using the **syntax** and the **semantics** translation table on the prior slide, software that resides either in the AIT device or the AIS can translate between the three approved, interoperable formats

Formats:

TEI: (Format has to be assigned by SC 31, all 2-digit numbers used or reserved)
[>^R_S **DD**^G_S **DUN**194532636^G_S **PNO**1234^G_S **SEQ**7869^E_T 50^E_O

EAN.UCC: Application Identifiers

[>^R_S **05**^G_S **TBD**194532636^G_S **01**1234^G_S **21**786950^E_O

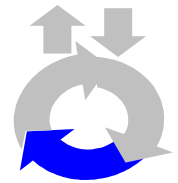
MH 10.8.2: Data Identifiers

[>^R_S **06**^G_S **12V**194532636^G_S **1P**1234^G_S **S**786950^E_O






Capture the UID



BUSINESS RULES

- In a database, once the UID is derived, it shall not be parsed to determine the original elements¹

EID 12V194532636	
Orig. Part No. 1P1234	
Current Part No. 30P5678	

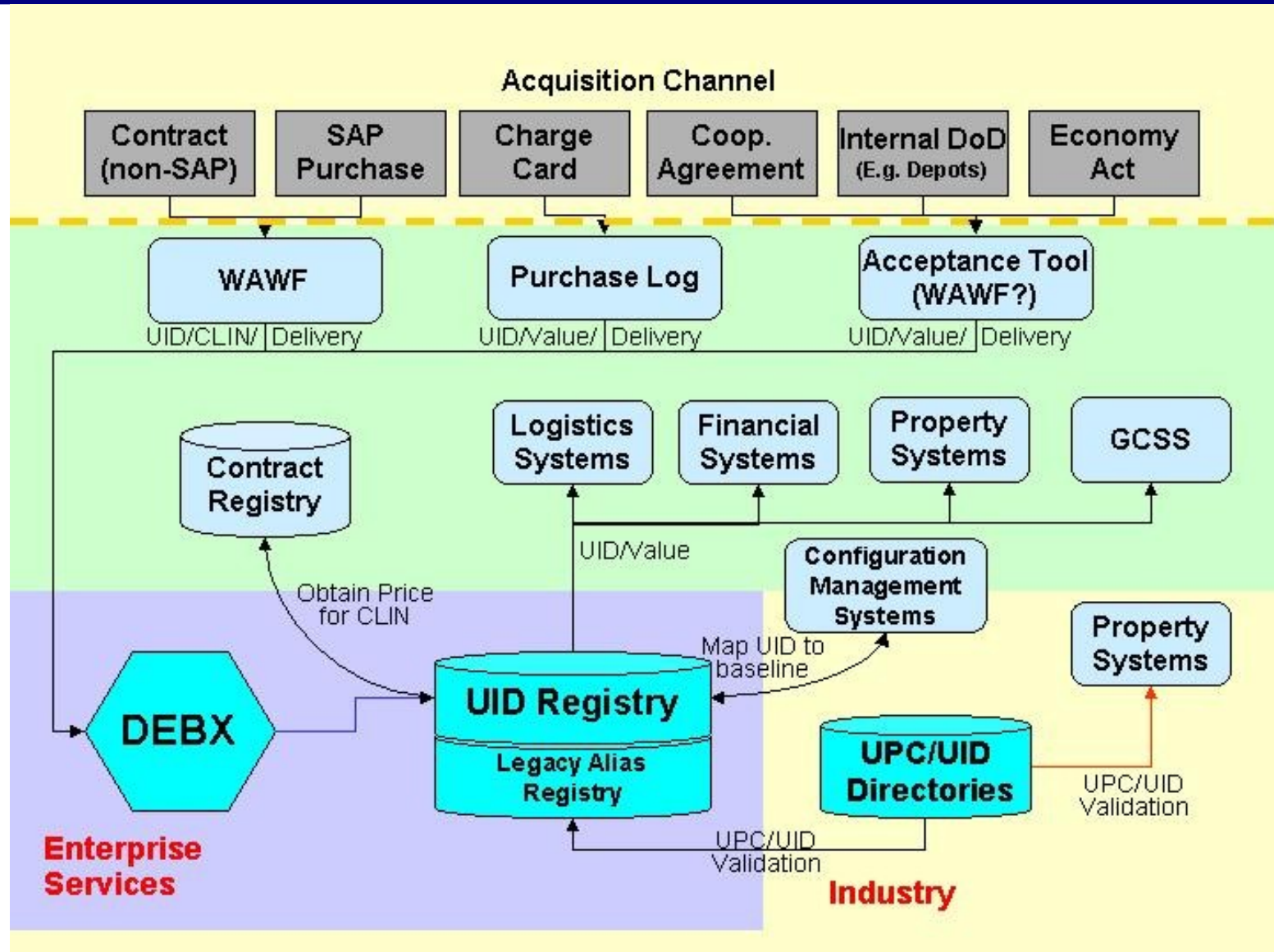
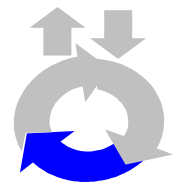
Record ID	UID (Constructed with a Business Rule)	EID	Orig. Part No.	Serial No.	Current Part No.	"Other Data"...
	UN194532636123478 6950	1945326 36	1234	786950	5678	→ → →

Incremental *Never Changes
(mandatory for audit)* *Can Change*

¹ This example uses MH10.8.2 Data Identifiers.

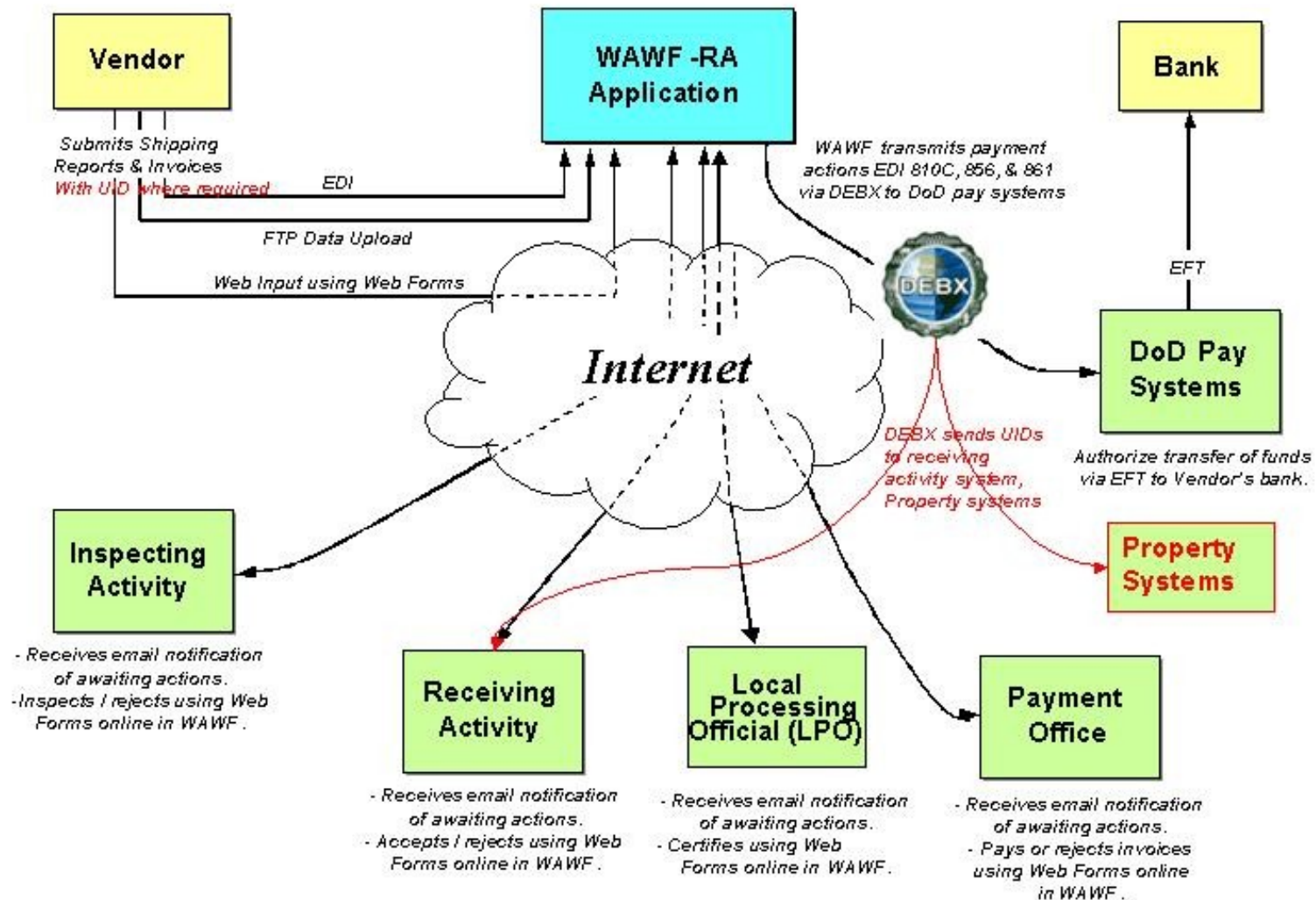
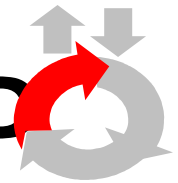


Capture the UID





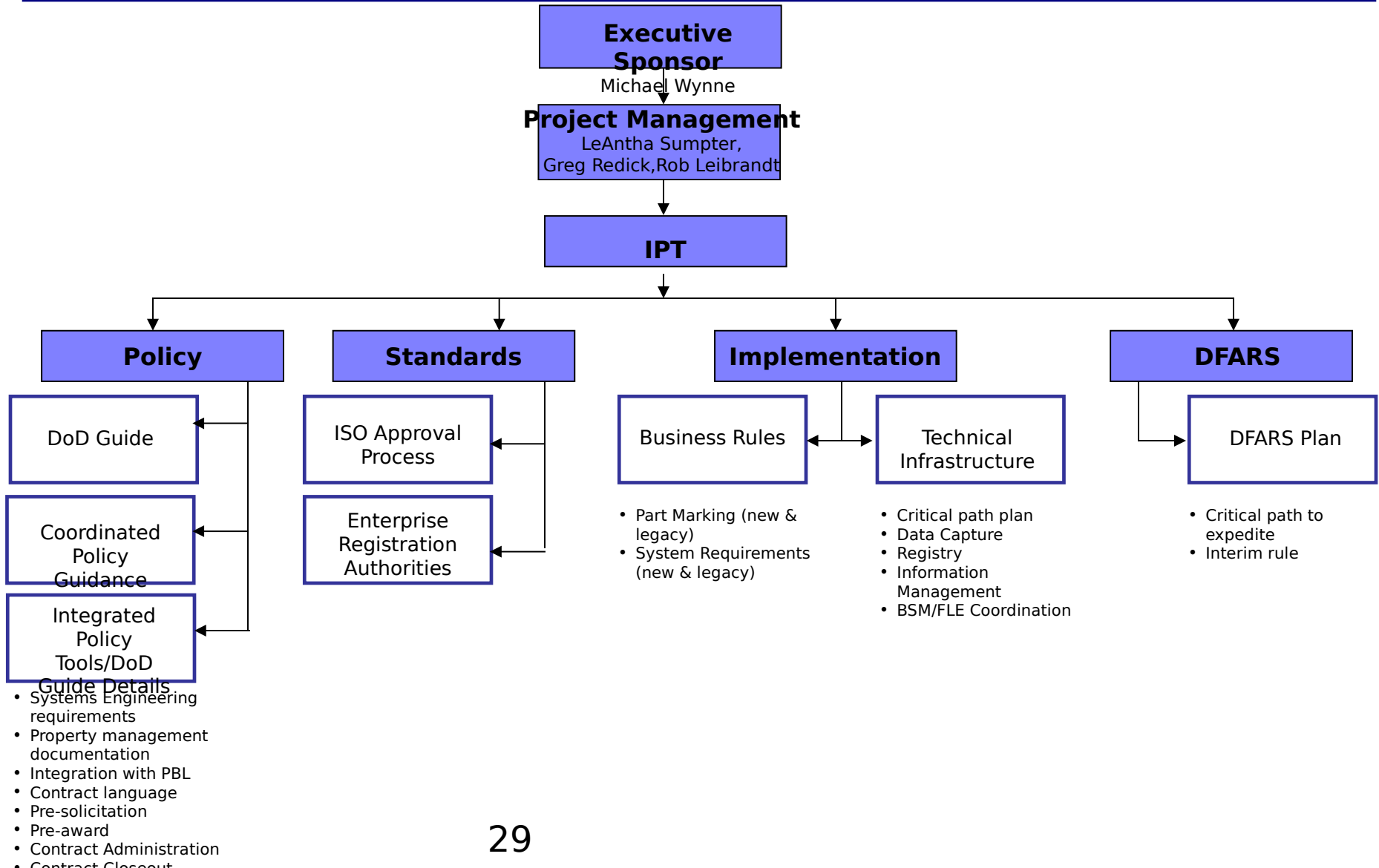
Capturing and Initiating UID Use



UID Organization & Efforts-to-Date



Current Organizational Structure





Policy Effort

The Policy efforts-to-date have included:

- Publishing the July policy and policy forecast memos
- Identifying and completing coordinated guidance
- Finalizing the first version of the Unique Guide for Uniquely Identifying Tangible Items (UID Guide) for implementing UID



DFARS Effort

The DFARS Cases efforts-to-date have included:

- The public hearing was held on May 28, 2003
- Responding to comments made during the hearings
- Developing a final draft rule to submit to DAR Council
- Submitting the draft DFARS interim rule to OMB for approval



Standards Team

The Standards Team efforts-to-date have included:

- Establishing the UID Constructs #1 and #2
- Identifying the collaborative solution
- Adding the necessary semantics to all three data standards to support the elements of the UID
- Submitting a new work item proposal to ISO/IEC for incorporating UID-specific requirements into existing standards



Implementation Team

The Implementation Team efforts-to-date have included:

- Developing an AIS infrastructure plan to accommodate the UID
- Developing a plan for a UID registry
- Finalizing the UID business rules for marking, conformance, and data capture
- Reviewing existing serial number tracking and UID-related implementation programs to develop best practices for UID

Next Steps



What's Next

- Charter a Joint Requirements Implementation Board
- Support RFID policy development
- Develop tool kit for program managers
- Develop a second DFARS case for Government Furnished Equipment and UIDs
- Determine AIS and infrastructure requirements; continue working implementation solutions for existing programs
- Secure funds to modify and fully deploy AIS tools to support UID₃₅



What Does it Mean for Me?

- UID item marking will be a mandatory requirement for all new weapons systems programs, including major modifications, no later than July 2003 and apply to contracts awarded after 1 Jan 2004

A variety of UID background materials and previous UID policy memos can be found at

www.acq.osd.mil/uid